

Practice

Student Edition
Pages 359-364

Sum and Product of Roots

Solve each equation. Then find the sum and the product of the roots to check your solutions.

1. $x^2 - 7x + 4 = 0$

2. $x^2 + 3x + 6 = 0$

3. $2x^2 + 5x + 6 = 0$

4. $7x^2 - 5x = 0$

5. $4x^2 - 9 = 0$

6. $-5x^2 - x + 4 = 0$

7. $3x^2 + 8x = 3$

8. $\frac{2}{3}x^2 - \frac{1}{2}x - 1 = 0$

Write a quadratic equation that has the given roots.

9. 7, -3

$S = 4$

$P = -21$

$x^2 - 4x - 21 = 0$

10. 4, $\frac{1}{3}$

11. $-\frac{2}{3}, -\frac{4}{5}$

$S = -\frac{22}{15}$

$P = \frac{8}{15}$

$15x^2 + 22x + 8 = 0$

12. $-2\sqrt{5}, 4\sqrt{5}$

13. $3 - \sqrt{6}, 3 + \sqrt{6}$

$S = 6$

$P = 3$

$x^2 - 6x + 3 = 0$

14. $7 - 2i, 7 + 2i$

15. $7i, -7i$

$S = 0$

$P = 49$

$x^2 + 49 = 0$

17. $2 + i\sqrt{11}, 2 - i\sqrt{11}$

$S = 4$

$P = 15$

$x^2 - 4x + 15 = 0$

16. $\frac{2 + \sqrt{10}}{5}, \frac{2 - \sqrt{10}}{5}$

$S = \frac{4}{5}$

$P = -\frac{6}{25}$

$25x^2 - 20x - 6 = 0$

18. $\frac{1 + 6i}{4}, \frac{1 - 6i}{4}$

Find k such that the number given is a root of the equation.

19. 7; $2x^2 + kx - 21 = 0$

$2(7)^2 + k(7) - 21 = 0$

$98 + 7k - 21 = 0$

$7k = -77$

$k = -11$

$-11 = k$

20. -2; $x^2 - 13x + k = 0$

$(-2)^2 - 13(-2) + k = 0$

$4 + 26 + k = 0$

$30 + k = 0$

$k = -30$